

SCREENING RECOMMENDATIONS

The Goal

The goal of the guidelines is to have a more efficient screening policy, which is responsive to local needs and conditions.

Incorporating Risk Into The Policy

Recommendations for blood lead screening focus on the population most at risk in terms of age, socioeconomic status, age of housing, and renovations occurring in the home.

Age as a Risk Factor

One- and two-year-olds are at greatest risk for elevated blood lead levels because of:

- increasing mobility during the second year of life, resulting in more access to lead hazards. A child not able to easily reach areas of highest risk in a home (e.g. window wells) at age one, could potentially test negative at age one and then, with increased mobility, have a positive test at age two;
- the presence of normal hand-to-mouth activity, and
- the developing systems of young children are more susceptible to the adverse effects of lead.

National data demonstrates that lead levels peak at 18 to 24 months of age (CDC, 1997).

Enrollment in Medicaid or Other Income-Based Assistance Programs

Children enrolled in Medicaid (and other programs such as WIC and Head Start that have the same income guidelines) are at greater risk due to the link between income and housing conditions.

- Lead screening is a required component of the Early and Periodic Screening, Diagnosis, and Treatment Program (EPSDT), because, as a group, young children in Medicaid are more likely than other children to be exposed to lead (GAO, 1998)

Housing as a Risk Factor

Housing built before 1950 poses the greatest risk to young children since lead paint was being widely used for residential purposes. Children are at risk due to the exposure to deteriorating lead paint and lead dust. While the percentage of housing built before 1950 statewide is 28 percent, in the highest risk areas of the state, the proportion of housing built before 1950 ranges from 45 to 70 percent. Many older housing units in the highest risk areas are deteriorating and pose a threat to young children from lead exposure hazards.

- Lead-based paint and dust is the source of more than 90% of NH lead poisoning cases.
- Renovations in older homes present a serious risk. Almost 1 of every 3 children with a blood lead level of 20 µg/dL or greater lived in or regularly visited a home that had undergone recent renovations (within the last 6 months).
- Renovation-related elevated blood lead levels are unrelated to socioeconomic indicators.

Determining Which Children to Test

In New Hampshire, communities with 27 percent or more of the housing stock built before 1950 are considered high-risk by the Lead Program. CDC's recommended cut-off for a high-risk community is twenty-seven percent pre-1950 housing, based on 1990 Census data. In these high-risk communities, a "universal" screening approach is recommended; that is, all children will be tested at one and two years of age, and older children up to six years of age who have not previously been tested will also be tested. A targeted approach is suggested in communities designated as low-risk. See Table 3 for a list of towns.

This approach recommends that providers use a brief questionnaire and screen children only if they meet specific criteria. A copy of the questionnaire is on page 15. All children who are enrolled in Medicaid, receiving WIC benefits or who are enrolled in Head Start should be tested regardless of the risk designation of their town of residence. Children living in communities designated as low-risk should be screened according to targeted screening recommendations. The table below outlines the screening recommendations. More detailed information about screening follows.

Table 2: Guidelines for Lead Screening

Community Risk Designation	Screening Approach	Age of Child	
		At Ages 1 and 2	At Ages 36 to 72 Months
High-risk	Universal	<ul style="list-style-type: none"> • Test all children. 	<ul style="list-style-type: none"> • Test, if not previously tested.
Low-risk	Targeted	<ul style="list-style-type: none"> • Test all children enrolled in Medicaid, or who are receiving WIC benefits or who are enrolled in Head Start. • Test children based on individual risk factors as determined by questionnaire. 	<ul style="list-style-type: none"> • Test, if not previously tested based on individual risk factors as determined by questionnaire, or if a member of a high-risk group.

Please note: All children insured by Medicaid/Healthy Kids-Gold are required by Medicaid regulations to have a blood lead test at 12 and 24 months of age, and enrolled children 36-72 months of age must be tested if they were not previously tested.

Universal Screening Recommendation For Children Living in High-risk Communities

Screen all children at one and two years of age (i.e. at the well child visits around the child's first and second birthday), and screen all children ages 36-72 months who have not been screened previously.

Universal screening recommendations should be followed for children living in areas designated as high-risk.

Targeted Screening Recommendation For Children Living in Low-risk Communities

Targeted screening recommendations can be followed for children living in areas designated as low-risk.

Providers identify children with individual risk factors for testing through the use of a questionnaire with all children at ages one and two. Children ages 36 to 72 months who have not been previously assessed or tested should also be assessed using a questionnaire. A positive or uncertain response to one or more questions denotes that testing is indicated. A copy of the lead exposure risk questionnaire can be found on the following page.

All Medicaid/Healthy Kids-Gold-enrolled children regardless of town of residence are required by Medicaid regulations to have a blood lead test at one and two years of age, or at 36-72 months of age if not previously tested. All children who are receiving benefits under WIC or enrolled in Head Start should also be tested regardless of the risk designation of their town of residence.

Table 3: Lead Screening Designation for New Hampshire Cities, Towns, and Villages

U=Universal: Test all children at ages one and two. Also test three- to five- year-olds not tested at age two.

T=Targeted: Test all children at ages one and two who have Medicaid/Healthy Kids-Gold insurance or are receiving WIC benefits. Assess all other children with a risk questionnaire at ages one and two. Also administer questionnaire for three to five year olds not assessed or tested at age two.

Acworth	U	Derry	T	Haverhill	U	New Ipswich	U	South Newbury	U
Albany	T	Dixville	U	Hebron	U	New London	U	South Sutton	U
Alexandria	U	Dorchester	U	Henniker	U	Newbury	U	South Tamworth	U
Allenstown	T	Dover	U	Hill	U	Newfields	U	Spofford	U
Alstead	U	Drewsville	U	Hillsboro	U	Newington	U	Springfield	U
Alton	U	Dublin	U	Hillsborough	U	Newmarket	U	Spruceville	T
Alton Bay	U	Dummer	U	Hinsdale	U	Newport	U	Stark	U
Amherst	T	Dunbarton	U	Holderness	U	Newton	T	Stewartstown	U
Andover	U	Durham	T	Hollis	T	Newton Junction	T	Stinson Lake	U
Antrim	U	East Alstead	U	Hooksett	T	North Conway	U	Stoddard	T
Ashland	U	East Alton	U	Hopkinton	T	North Hampton	U	Strafford	U
Ashuelot	U	East Andover	U	Hudson	T	North Haverhill	U	Stratford	U
Atkinson	T	East Candia	T	Intervale	U	North Salem	T	Stratham	T
Auburn	T	East Derry	T	Jackson	U	North Sandwich	U	Sugar Hill	U
Barnstead	U	East Hampstead	T	Jaffrey	U	North Stratford	U	Sullivan	U
Barrington	T	East Kingston	U	Jefferson	U	North Sutton	U	Sunapee	U
Bartlett	U	East Lebanon	U	Kearsarge	U	North Swanzey	U	Suncook	U
Bath	U	East Lempster	T	Keene	U	North Walpole	U	Surry	U
Bedford	T	East Rochester	U	Kellyville	U	North Woodstock	U	Sutton	U
Belmont	T	East Sullivan	U	Kensington	U	Northfield	U	Swanzey	U
Bennington	U	East Swanzey	U	Kingston	U	Northumberland	U	Swiftwater	U
Benton	U	East Wakefield	U	Laconia	U	Northwood	U	Tamworth	U
Berlin	U	Easton	T	Lakeport	U	Nottingham	T	Temple	U
Bethlehem	U	Eaton	U	Lancaster	U	Odell	T	Thornton	T
Boscawen	U	Effingham	U	Landaff	U	Orange	U	Tilton	U
Bow	T	Elkins	U	Langdon	U	Orford	U	Troy	U
Bowkerville	U	Ellsworth	T	Lebanon	U	Ossipee	U	Tuftsboro	U
Bradford	U	Enfield	U	Lee	T	Pelham	T	Twin Mountain	T
Brentwood	U	Enfield Center	U	Lempster	T	Pembroke	U	Union	U
Bretton Woods	T	Epping	T	Lincoln	T	Penacook	U	Unity	T
Bridgewater	T	Epsom	T	Lisbon	U	Peterborough	U	Wakefield	U
Bristol	U	Errol	U	Litchfield	T	Piermont	U	Walpole	U
Brookfield	U	Etna	U	Littleton	U	Pike	U	Warner	U
Brookline	T	Exeter	U	Lochmere	T	Pinnardville	T	Warren	U
Campton	U	Farmington	U	Londonderry	T	Pittsburg	U	Washington	T
Canaan	U	Fitzwilliam	U	Loudon	T	Pittsfield	U	Waterville Valley	T
Candia	T	Francestown	U	Lyman	T	Plainfield	U	Weare	T
Canterbury	U	Franconia	U	Lyme	U	Plaistow	T	Webster	T
Carroll	T	Franklin	U	Lyndeborough	U	Plymouth	U	Weirs Beach	U
Center Barnstead	U	Freedom	T	Madbury	T	Portsmouth	U	Wentworth	U
Center Conway	U	Fremont	T	Madison	T	Potter Place	U	West Canaan	U
Center Harbor	U	Georges Mills	U	Manchester	U	Randolph	U	West Chesterfield	U
Center Ossipee	U	Gilford	T	Marlborough	U	Raymond	T	West Franklin	U
Center Sandwich	U	Gilmanton	T	Marlow	U	Richmond	U	West Hampstead	T
Center Strafford	U	Gilmanton Ironworks	T	Mason	T	Rindge	U	West Lebanon	U
Center Tuftsboro	U	Gilsum	U	Melvin Village	U	Rochester	U	West Nottingham	T
Charlestown	U	Glen	U	Meredith	U	Rollinsford	U	West Ossipee	U
Chatham	U	Glenciff	U	Meredith Center	U	Roxbury	U	West Peterborough	U
Chester	U	Goffstown	T	Meriden	U	Rumney	U	West Springfield	U
Chesterfield	U	Gonic	U	Merrimack	T	Rye	U	West Stewartstown	U
Chichester	U	Gorham	U	Middleton	T	Rye Beach	U	West Swanzey	U
Chocorua	U	Goshen	U	Milan	T	Salem	T	Westmoreland	U
Claremont	U	Grafton	U	Millford	T	Salisbury	U	Whitefield	U
Clarksville	U	Grantham	T	Millsfield	T	Sanbornston	U	Wilmot	U
Clinton	U	Greenfield	U	Milton	U	Sanbornville	U	Wilmot Flat	U
Colebrook	U	Greenland	T	Milton Mills	U	Sandown	T	Wilton	U
Columbia	U	Greenville	U	Mirror Lake	U	Sandwich	U	Winchester	U
Concord	U	Groton	T	Monroe	U	Seabrook	T	Windham	T
Contoocook	T	Grovelton	U	Mont Vernon	U	Sharon	T	Windsor	T
Conway	U	Guild	U	Moultonborough	T	Shelburne	U	Winnisquam	T
Cornish	U	Hampstead	T	Mt Sunapee	U	Silver Lake	T	Wolfeboro	U
Cornish Flat	U	Hampton	T	Munsonville	U	Somersworth	U	Wolfeboro Falls	U
Croydon	U	Hampton Beach	T	Nashua 03060 zip	U	South Acworth	U	Wonalancet	U
Dalton	U	Hampton Falls	U	Nashua 03061-3 zips	T	South Charlestown	U	Woodstock	U
Danbury	U	Hancock	U	Nelson	U	South Chatham	U		
Danville	T	Hanover	U	New Boston	T	South Deerfield	U	Woodsville	U
Davisville	U	Hanover Center	U	New Castle	U	South Effingham	U		
Deerfield	U	Harrisville	U	New Durham	T	South Hampton	U		
Deering	T	Hart's Location	T	New Hampton	U	South Kingston	U		

Note: Any village not listed has the same designation as the town it is located in.

LEAD EXPOSURE RISK QUESTIONNAIRE

Child's
Name _____ DOB _____

Health Care
Provider's Name _____

Please answer questions 1 through 5. Use a check (✓) to mark the box next to your answer choice.

Questions	Age: _____ Date: _____
1 Is your child enrolled in Medicaid/ Healthy Kids Gold?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
2 Does your child receive WIC benefits?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
3 Does your child live in or regularly visit a house (or child care facility) that was built before 1950?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
4 Does your child live in or regularly visit a house (or child care facility) built before 1978 with recent or ongoing renovations or remodeling (within the last 6 months)?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
5 Does your child have a sibling or playmate who has or did have lead poisoning?	Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know <input type="checkbox"/>
For office use only: Based on responses, is a blood lead test indicated?	Yes <input type="checkbox"/> No <input type="checkbox"/>

A "Yes" response to any of the questions indicates the child should be tested.
A "don't know" response to questions 3 and 4 indicates the child should be tested.

NH Childhood Lead Poisoning Prevention Program



800-897-LEAD

Lead Exposure Risk Questionnaire For Children Living In Targeted Screening Communities

A risk questionnaire stimulates dialogue between the health care provider and the parent about whether or not an individual child should be screened. It also gives health care providers the opportunity to educate families about lead hazards.

A “Yes” response to any of the questions indicates a child should be tested. A “don’t know” response to questions three and four indicates the child should be tested.

Core Questions

The Lead Program recommends that, at a minimum, the lead exposure risk questionnaire contain five core questions. Providers may choose to expand the questionnaire based on their knowledge of risk factors present in their communities.

Optional questions

Providers may have knowledge about local conditions other than housing which put children at increased risk of exposure to lead. If your experience indicates it is likely that children in your practice may have any of the risks factors referenced below, please consider adding the appropriate questions to the questionnaire that you routinely use. Electronic copies can be obtained by contacting the Lead Program at 271-4507 or at the Program’s e-mail address: leadinfo@dhhs.state.nh.us.

Table 4: Lead Exposure Risk Questionnaire Optional Questions

Suggested questions	Risk Factor	Rationale
<ul style="list-style-type: none">• Does your child live with an adult whose job or hobby involves exposure to lead?	Take-home lead	Particles and dust can be brought home on work clothes and equipment and expose children. See Table 5 for a list of occupations and hobbies.
<ul style="list-style-type: none">• Have you ever been told that your child has lead poisoning?• Have you recently moved?	Personal or family history	A child’s environment is the likely source of lead exposure hazards. Learning if a child’s current, or recent, housing is likely to contain lead paint will reveal risk.
<ul style="list-style-type: none">• Have you seen your child eating paint chips?• Have you seen your child eating soil or dirt?	Behavior	These behaviors may indicate a child has an increased risk of ingesting lead.

Suggested questions	Risk Factor	Rationale
<ul style="list-style-type: none"> Have you been told that your child has low iron? 	Associated medical problems	Anemia may be the result of lead's interference with the body's ability to make red blood cells.
<ul style="list-style-type: none"> Does your child live near an active lead smelter, a battery recycling plant, a municipal incinerator or other industry likely to release lead into the environment? 	Industrial exposure	Industries that release lead into the environment may increase the likelihood of exposure for children in the surrounding community.
<ul style="list-style-type: none"> Has your child ever been given home remedies (e.g. azarcon, greta, pay looah)? Does your family use pottery or ceramicware for cooking, eating, or drinking? Has your child been to Latin America? Has your child ever lived outside the US? 	Cultural exposures	<p>Home remedies commonly used in some cultures may contain high concentrations of lead.</p> <p>Imported pottery used in cooking may contain lead and create an ongoing exposure.</p> <p>Many developing countries have environmental lead emissions. Children who have lived in other parts of the world may have elevated blood lead levels.</p>
<ul style="list-style-type: none"> Does your child live within one block of a major highway or busy street? Do you use hot tap water for cooking or drinking? 	Other sources	<p>Heavily traveled roads are likely to be lined by contaminated soil due to fallout from leaded gasoline.</p> <p>Lead solder used in old pipes can contaminate drinking water.</p>

Table 5: Jobs and Hobbies That May Expose Adults to Lead

<p>Manufacturing Lead acid batteries Cable, wire products, solder Firearms, bullets, explosives Rubber or plastics</p> <p>Metal Working (with lead-containing metals) Foundry work, casting, forging Grinding</p> <p>Repair Automotive radiator, autobody Ship repair Welding, cutting, sanding Grinding of lead alloys or lead-coated surfaces Soldering, electronics repair Repair work that disturbs lead paint</p>	<p>Construction Painting or paint removal (sanding, abrasive blasting, scraping, torching, stripping, heat gun applications) Remodeling/ Renovations Plumbing, glazing, brick laying, Lead burning Construction/ repair of bridges, water towers, tanks Welding or cutting materials with lead-coated or lead alloys</p>	<p>Hobby Sources Home remodeling Melting lead for fishing weights, bullets, or toys Target shooting Using lead glazes in ceramics Backyard scrap metal recycling, radiator repair Stained glass making Burning painted wood in fireplaces</p> <p>Other sources Shooting firearms Cleanup at firing ranges Using lead-containing paints, inks, pigments, glazes Working at municipal solid waste incinerators</p>
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Indications for Additional Screening

These guidelines are intended as minimum recommendations and providers need to use their judgment and knowledge of their patient population to make the final decisions about who to test. If a provider becomes aware of a known exposure for a child after the age of two, regardless of whether a child lives in a high- or low-risk area, additional screening may be indicated. The following outlines some of the indications for additional screening.

Increased likelihood of exposure

A child's risk for exposure may increase if the family has relocated to older housing, or if the child lives in an older home that has recently been repaired or renovated.

Pica and ingestion of non-food items

Pica in children increases their risk of lead exposure. Swallowed foreign bodies, such as curtain weights, lead fishing sinkers and lead shot, have been linked to poisoning in children. Parental hobbies, such as hunting, fishing, ceramics, and furniture refinishing may involve lead-containing materials, which may be accessible to a child.

Parental request

Parents may express concern about their child's potential lead exposure because of residence in older housing, nearby construction or renovation, an elevated blood lead level in a neighbor's child, or exposure through an adult's occupation or hobby. Such information may be valuable in highlighting potential exposure.

Symptomatic children

Children who have developmental delays, unexplained seizures, neurological symptoms, abdominal pain or other symptoms consistent with lead poisoning should have a venous blood lead level drawn as part of their diagnostic exam.

Unusual sources

Practitioners should also be alert to the potential for exposure from unusual sources of lead. These sources include lead glazed pottery and ceramic-ware used for cooking, serving and storing food; painted wood which is burned in home stoves and fireplaces; lead particles brought home on the clothing of frequent users of indoor firing ranges; molten lead used in casting ammunition and making fishing weights and toy soldiers.

Other potential sources include folk medicines and cosmetics, which often contain lead as a major ingredient. Examples of such products include greta and azarcon (for gastrointestinal problems) and surma and kohl (for

medicinal or cosmetic purposes). Examples of such exposures have been reported among residents from the Arab cultures, from the Indo-Pakistan subcontinent, from China, and from Latin America.

Screening Method

Screening should be done by blood lead measurement of either a venous or capillary blood specimen. While a venous sample is preferable for the purpose of accuracy, obtaining capillary samples may be a more practical option at some screening sites. Elevated capillary blood lead levels are considered presumptive and should be confirmed with a venous specimen. Contamination of capillary samples can be effectively eliminated if proper technique is followed. See pages 20 and 21 for specimen collection procedures. A CD-ROM or video presentation titled: "CDC Guidelines for Collecting and Handling Blood Lead Samples – 2004" is available free of charge from the Childhood Lead Poisoning Prevention Program by calling 800-897-LEAD (5323).

Portable Lead Testing Machines: Certification and Reporting Requirements

In-office use of portable lead testing machines is acceptable, as test results can be available immediately and necessary follow-up of venous samples can be collected immediately. Health care providers using this method of blood lead analysis must meet all Clinical Laboratory Improvements Amendments (CLIA) requirements and be certified by the Department of Health and Human Services (DHHS) Health Facilities Administration for the use of this equipment. By law, laboratories performing blood lead analysis must report to the Department *all* blood lead test results for New Hampshire residents. With use of the portable testing machines, reporting of blood lead results becomes the health care provider's responsibility. Please contact the Childhood Lead Poisoning Prevention Program's epidemiologist at 800-897-LEAD (5323) to discuss the most efficient way to report blood lead results.

PROCEDURE FOR OBTAINING CAPILLARY SPECIMENS FOR LEAD

Public Health Laboratories, Division of Public Health Services
29 Hazen Drive, Concord, NH 03301-6527
Tel (603)271-4661 Fax (603)271-4783

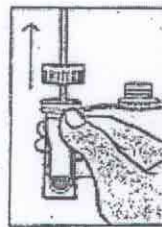
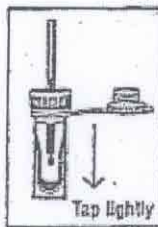
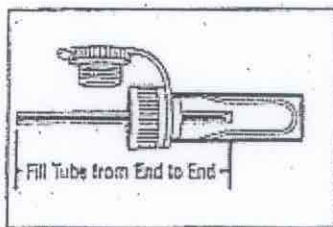
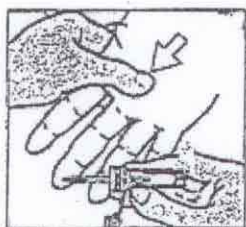
Please note: Puncturing the fingers of infants younger than 1 year of age is not recommended. Puncturing of the heel or toe may be more suitable. (CDC 1991)

The Capillary Childhood Lead Collection Kit contains:

Collection tube - Purple top (contains EDTA anticoagulant)
Gauze pad
Lancet
Adhesive bandage
Alcohol pad
Blank label
Requisition slip
Inner metal liner
Outer cardboard mailer

Procedure for collection and submission

1. Identify the patient.
2. Fill out the lab requisition form completely and legibly with patient information.
3. Scrub area to be punctured with soap and water and dry with a lint free towel. Do not let area come in contact with other surfaces.
4. Clean the site with the alcohol pad. Dry the area with the gauze pad.



5. Hold the lancet on the site to be punctured with moderate pressure. Depress the plunger to make the puncture. Release plunger while holding lancet on site. Remove lancet and discard.

(cont.)

6. Gently squeeze the area to allow a drop of blood to appear from the puncture site. Wipe this first drop away with the gauze.
7. Holding the collection tube **horizontally**, touch the capillary tube to the drop of blood formed. While gently squeezing and releasing the area, allow blood to enter the capillary tube. Do not push the capillary tube down against the bottom of the collection tube as this may stop the flow of blood into the tube.
8. The minimum amount needed for analysis is 200 μ l. One third of the container is an easy way of measuring the correct amount. Additional blood will ensure sufficient quantity.
9. Upon completion of collection, apply pressure to the puncture site with gauze.
10. Invert the collection tube to a vertical position and lightly tap the bottom of the tube. This will allow the capillary tube to empty into the collection tube.
11. Apply the adhesive bandage to the puncture site.
12. Remove capillary tube together with the purple sleeve and discard. Close the collection tube firmly and completely with the attached cap.
13. Mix the blood by vigorously inverting the collection tube 8-10 times.
14. Label the collection tube with the patient's name. Ensure the name on the tube corresponds with the laboratory requisition.
15. Place collection tube in the metal liner.
16. Wrap the requisition form around the outside of the metal liner and insert into the cardboard mailer.
17. Mail or deliver specimens to the laboratory within 5 days of collection. Specimens should be refrigerated until shipment.

NOTES:

Draw the blood maintaining a continuous flow. If air bubbles are present, the tube may stop filling.

These collection tubes should not be used for aliquots of a venous collection from another EDTA tube. This will double the amount of anticoagulant and may give erroneous results.

On a small child, sometimes it is easier to grasp all of the fingers on the hand rather than just the one to be used for the fingerstick.

Warming the site and keeping it below the heart level will help increase the flow of blood.